

REMARKS

Claims 1-20 are pending in the application. Claims 1-12 and 15-20 are rejected, and claims 13 and 14 are objected to as being dependent upon a rejected base claim. With this response independent claims 1, 17 and 20 are amended to overcome the rejections of the non-final Office Action, and claims 2 and 3 are cancelled. Dependent claims are also amended so that they do not depend from a cancelled claim. Dependent claim 14 is also amended to solve an antecedent basis problem. New independent claims 21 and 22 are added, and incorporate the limitations of objected to claims 13-14. Claim 21 incorporates the limitations of claim 13, and claim 22 incorporates the limitations of claim 14, and reflects the current amendment to claim 14 that solves the antecedent basis problem. All amendments are supported by the specification as originally filed. Specifically, support for the amendments are found in claims 2 and 3 as originally filed, page 5, lines 11-25, page 10, line 20 – page 11, line 3, and page 12, lines 9-26 of the priority PCT application.

Claims 1-5, 8-12, and 15 are rejected under 35 U.S.C. § 102(b) as being anticipated by Hayes, Jr. (U.S. Pat. No. 6,002,927). Claims 1, 15-17, and 20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Uriya (U.S. Pat. No. 6,574,489) in view of Hayes. Claim 20 is also rejected under 35 U.S.C. § 103(a) as unpatentable over Ricoh (Japanese Pat. No. 09-37322) in view of Hayes. Claims 6-7 are rejected under 35 U.S.C. § 103(a) as unpatentable over Uriya in view of Hayes, and further in view of Eiji et al. (Japanese Pat. No. 07285638). Claims 13-14 are objected to as being dependent upon a rejected base claim, but are allowable if rewritten in independent form.

Summary of the References

Hayes discloses a method and apparatus for cooling an electronic device (e.g. a cellular telephone) and generating a vibration signal. The apparatus comprises a motor 20 having a rotator 22, a cooling flow generator 26 and a vibrational signal generator

28. The vibrational signal generator 28 comprises a first eccentric weight 90, a second eccentric weight 92 and a drive shaft 94. The weights are repositionable relative to each other between a first relative position (See Fig. 2) and a second relative position (See Fig. 3). In the first position, the eccentric weights 90, 92 have a combined center of mass 96 located at a radius R1 from the axis 44 of the drive shaft 94. In the second position, the eccentric weights 90, 92 have a combined center of mass 98 located at a radius R2 (substantially zero) from the axis 44 of the draft shaft 94. When rotated in the first position, a first vibrational output is generated, wherein the first vibrational output has a magnitude sufficient to alert the user. When rotated in the second position, a second vibrational output is generated, wherein the second vibrational output has a magnitude equal to substantially zero. Furthermore, Hayes provides the eccentric weights 90, 92 with surfaces 100, 102 and a tab 104 which may engage to maintain the eccentric weights 90, 92 in the first position or in the second position. (See Fig. 2, Fig. 3, column 6 line 43 – col. 7 line 22.)

Ricoh discloses a pager including a vibrator to convert received messages into mechanical vibration. Eiji discloses a variable type vibrator with two electric motors, each having an unbalanced weight mounted on a motor shaft. Uriya discloses an incoming call notification method for a radio device with multiple communication modes (i.e. radio system modes such as cellular mode or cordless mode). The radio device comprises a vibrator arranged to output a different vibration according to the current communication mode in order to notify the user about an incoming call to allow the user to identify the used radio system (See Abstract.)

Amended Claim 1 is not Anticipated or Suggested by Hayes

Hayes fails to teach or suggest all of the limitations of amended claim 1. Amended claim 1 now includes a member that forms a force in an angular direction opposite to the angular direction produced by the electric motor. The member maintains the changed offset  $r$  on a desired level within a predetermined range. Hayes fails to teach or suggest a member and a force formed by this member (such as the

torsion spring and the associated torsion force or the magnet and the associated magnetic force of the present invention) that allow maintaining the offset  $r$  on a desired level within a predetermined range by trying to change the angular disposition of the two weight elements in an angular direction opposite to the angular direction of the force generated by the electric motor. The electric motor adjusts the angular disposition of the weight elements, which changes the offset  $r$ . The member applies a force in an angular direction opposite to the angular direction of the force created by the electric motor. Controlling the rotating power of the electric motor can vary the force created by the electric motor. This allows for the angular disposition of the weight elements to be freely adjusted within a range, and allows the weight elements to move angularly with respect to each other.

In contrast, Hayes only discloses the use of a tab **104** to maintain the weights **90**, **92** in one of two angular positions. Figure 2 of Hayes represents the first position, and Figure 3 represents the second position. The tab **104** only prevents angular movement of the weights **90**, **92** when it is engaged on a surface of the opposing weight, and does not generate a force that tries to change the angular disposition of the weight elements. Amended claim 1 provides a member that does generate a force in an angular direction, and the force adjusts the weight elements angularly relative to each other along a predetermined range depending on the force generated by the electric motor. The weight elements are able to occupy a variety of configurations, instead of only two as disclosed by Hayes, which in turn allows offset  $r$  to be changed to any desired level within a predetermined range.

Hayes does not teach or suggest every element of amended claim 1, and therefore does not anticipate amended claim 1. Accordingly, applicant respectfully requests that the rejection under 35 U.S.C. § 102(b) to independent claim 1 be withdrawn, as well as the rejections to dependent claims 2-5, 8-12 and 15, in view of their dependencies. Applicant also respectfully requests that the objections to dependent claims 13 and 14 be withdrawn in view of their dependencies.

Independent Claims 1, 17 and 20 are Patentable Over the Cited References

Independent claims 1, 17 and 20 are rejected as obvious in view of Uriya and Hayes. All of the independent claims are rejected for similar reasons, and therefore only claim 1 will be discussed.

The Office Action states that Uriya fails to teach adjustment of the weight elements to provide vibrations with different amplitudes, and relies on Hayes for this teaching. As discussed above, Hayes fails to teach or suggest a member that applies a force in an angular direction opposite to the angular direction of the force generated by the electric motor. Therefore, claim 1 is not obvious in view of the cited references because the references fail to teach or suggest all of the limitations of claim 1.

The present invention has significant advantages over prior art due to the features of amended claim 1, because these features allow for more control over vibration amplitude. The limitations of amended claim 1 allow adjustment of the vibration amplitude to *any* level within a given range, and maintenance of the vibration amplitude on this adjusted level. In contrast, the cited references merely allow one or two constantly maintained vibration amplitude levels. As a result, the features of amended claim 1 allow a significantly wider variety of vibration signals compared to prior art without requiring the vibration frequency to be varied.

Independent claim 20 is also rejected as unpatentable under Ricoh in view of Hayes. The Office Action states that Ricoh fails to teach adjusting the product of the offset  $r$  and the mass of the weight unit, and relies on Hayes for this teaching. However, amended claim 20 requires that the product of the offset  $r$  and the mass of the weight unit be adjusted by the electric motor and a member applying a force in an angular direction opposite to the angular direction produced by the electric motor. Hayes does not teach or suggest a member that affects the product of the offset  $r$  and the mass by applying a force opposite to the force applied by the electric motor. Therefore, claim 20 is not obvious in view of the cited references because the references fail to teach or suggest all of the limitations of amended claim 20.

Accordingly, applicant respectfully requests that the rejections under 35 U.S.C. § 103(a) to independent claims 1, 17 and 20 be withdrawn, as well as the rejections to dependent claims 6-7, and 15-16, in view of their dependencies.

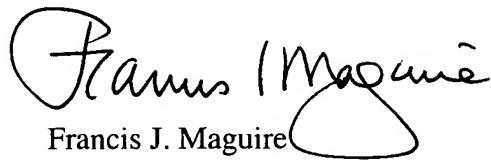
New Claims 21-22 are Allowable

New claims 21 and 22 are independent claims that incorporate the limitations of dependent claims 13-14, and all claims from which they depend. The Office Action states that claims 13-14 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Therefore, applicant respectfully submits that new claims 21-22 are neither taught nor suggested by the cited references, and are allowable.

CONCLUSION

Applicant respectfully submits that all of the claims remaining in the application are now in condition for allowance and their passage to issue is earnestly solicited.

Respectfully submitted,



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